

REMARKS/ARGUMENTS

Claim 71 is amended, and claims 1-70, 76 and 89-101 are or were previously canceled. In addition, claims 111-121 are new. Claims 71-75, 77-88, and 102-121 are now pending in the application. Applicants respectfully request reexamination and reconsideration of the application.

Claims 71-75, 77-88, and 102-110 were rejected under 35 USC 102(b) as anticipated by US Patent No. 4,636,722 to Ardezzone ("Ardezzone"). Applicants respectfully traverse this rejection.

Independent claim 71 recites "said adjusting a shape of a surface of a first of said substrates changes a planar orientation of a contact portion of one of a first plurality of said probes attached to said surface of said first substrate relative to another one of said first plurality of probes attached to said surface of said first substrate." In contrast, nothing in Ardezzone discloses that creating a vacuum in chamber 72 and thereby moving central rigid member 66 into the up position shown in Figure 5 changes a planar orientation of a contact portion of one of probe points 56 (which the PTO equated with the probes recited in claim 71) with respect to a contact portion of another of probe points 56. Indeed, as shown in Figure 5, the planar orientation of the bottom ends (which presumably are the contact portions) of probe points 56 are the same relative to each other while in the down position (shown in dashed lines in Figure 5) as in the up position (shown in Figure 5). Moreover, there would be no reason to expect the planar orientation of the bottom ends of probe points 56 to change between the down position and the up position shown in Figure 5 because the only purpose disclosed in Ardezzone for moving to the up position is to allow tested semiconductor dies to be removed and replaced with new dies, and the only purpose disclosed for moving to the down position is to bring the bottom portions of probe points 56 into contact with the new dies. Applicants also note that it logically follows from the facts that central *rigid* member 66 is rigid and Ardezzone does not disclose applying directly or indirectly an external force to central flexible member 64 in moving to the up position shown in Figure 5 that the planar orientation of the bottom ends of probe points 56 will not and indeed cannot change in moving between the down and up positions shown in Figure 5. For at least the foregoing reasons, independent claim 71 is not anticipated by Ardezzone.

Moreover, there is no logical reason to or advantage to be gained from modifying Ardezzone such that the planar orientation of the bottom ends of probe points 56 relative to each

other changes in moving from the down position to the up position shown in Figure 5. For at least this reason, independent claim 71 is not obvious in view of Ardezzone.

Applicants also note that claim 71 recites at least two substrates (because claim 71 uses the transition word "comprises," claim 71 effectively recites at least the first substrate and at least the second substrate). In contrast, Ardezzone, at best, discloses one substrate. Nor is there a logical reason to modify Ardezzone to include a second structure comprising layers 30, 32, 34, 39, 42 (which the PTO equated with one of the substrates recited in the present claims). Moreover, Applicants respectfully assert that it is insufficient for the PTO merely to state that it is *per se* obvious to provide a second substrate based solely on the alleged fact (which applications do not necessarily concede) that Ardezzone discloses one substrate. In fact, there would appear to be no way to include a second structure comprising layers 30, 32, 34, 39, 42 in Ardezzone's probe head assembly 10, nor would any readily apparent purpose be served or known problem be solved by doing so. In fact, the only disclosure of a purpose or advantage of utilizing more than one substrate each with a set of probes attached thereto is found in Applicants' specification, which, among other things, discloses that multiple substrates each with a set of probes can be utilized together to provide a large probe array comprising the probe sets on each substrate. For at least this additional reason, claim 71 is patentable over Ardezzone. Applicants note that dependent claims 107 and 110 recite additional features relating to multiple substrates and are for this reason, among other reasons, also thus not anticipated or rendered obvious by Ardezzone.

Claims 72-75, 77-88, and 102-121 depend from independent claim 71 and, at least because of that dependency, are also patentable over Ardezzone. Moreover, claims 72-75, 77-88, and 102-121 recite additional features not taught by or obvious in view of Ardezzone.

For example, claim 111 recites "adjusting said shape of said surface of said first substrate and adjusting said shape of said surface of said second substrate until an overall planar orientation of contact portions of said first plurality of probes and contact portions of said second plurality of probes change from a first planar relationship relative to one another to a second planar relationship relative to one another that is different than said first planar relationship." As discussed above with respect to claim 71, the planar orientation of the bottom portions of probe points 56 relative to each other does not change from the down position to the up position shown

in Figure 5 of Ardezzzone, nor is there a logical reason to modify Ardezzzone to do so. For at least this additional reason, claim 111 is patentable over Ardezzzone.

As another example, claim 115 recites that "said activating a plurality of actuators [recited in claim 80] moves a plurality of said regions [of said first substrate] with respect to said reference structure, wherein at least one of said plurality of regions is moved toward said reference structure and at least one of said plurality of regions is moved away from said structure." As can be seen in Figure 5 of Ardezzzone, all of the structure comprising layers 20, 32, 34, 39, 42 (which the PTO appears to have equated with the first substrate recited in the claims of the present application) either stays in the same place or moves in the same direction in the transition from the down position (shown in dashed lines in Figure 5) to the up position. Ardezzzone cannot therefore meet the recitations in claim 115. For at least this additional reason, claim 115 is patentable over Ardezzzone.

As yet another example, claim 116 recites "activating a first of said actuators to apply a pull force to a first region of said first substrate, said pull force moving said first region of said first substrate toward said reference structure," and "activating a second of said actuators to apply a first push force to a second region of said first substrate, said first push force moving said second region of said first substrate away from said reference structure." As discussed above with respect to claim 115, Ardezzzone cannot meet features in which one region of a first substrate moves in one direction and another region of the first substrate moves in another direction. For at least this additional reason, claim 116 is patentable over Ardezzzone.

As another example, claim 117 recites that "said first of said actuators comprises a first differential screw assembly," and "said second of said actuators comprises a second differential screw assembly." The PTO has not shown that Ardezzzone's stroke adjustment chamber or any other part of Ardezzzone's probe head assembly 10 that functions to move the probe head assembly 10 from the down position (shown in dashed lines in Figure 5) to the up position (shown in Figure 5) includes a differential screw assembly. Nor is there any logical reason to replace Ardezzzone's stroke adjustment chamber 72 with a differential screw assembly. For at least this additional reason, claim 117 is patentable over Ardezzzone.

As still further examples, claim 119-121 recite, among other things, that each actuator operates independently of the other actuators. In an effort to argue that Ardezzzone discloses more than one actuator, the PTO equated collars 74 with the actuators recited in ones of the claims

in the present application. As can be seen from Figure 5, however, collars 74 are mere stationary structures, and to the extent that collars 74 apply a force to the structure comprising layers 30, 32, 34, 39, 42, collars 74 do so only in reaction to movement from the down position (shown in dashed lines in Figure 5) to the up position (shown in Figure 5), which is caused by creating a vacuum in stroke adjustment chamber 72. Collars 74 therefore cannot do anything independent of the stroke adjustment chamber 72. For at least this additional reason, Ardezzone does not teach or render obvious the additional features recited in claims 119-121 117, and those claims are patentable over Ardezzone.

For all of the above reasons, Applicants respectfully assert that all of the claims are in condition for allowance. Applicants therefore request withdrawal of the rejection and allowance of the application. If at any time the Examiner believes that a discussion with Applicants' attorney would be helpful, the Examiner is invited to contact the undersigned at (801) 426-2106.

Respectfully submitted,

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